



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/528,629

03/22/2005

Andrew Brian Cundy

SHP-PT085

3770

3624 7590 03/04/2009

VOLPE AND KOENIG, P.C.  
UNITED PLAZA, SUITE 1600  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103

EXAMINER

PHASGE, ARUN S

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,629	<b>Applicant(s)</b> CUNDY ET AL.	
	<b>Examiner</b> Arun S. Phasge	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/15/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/15/08</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrase "wherein no conditioning solutions are added to the soil during performance of the method" was not described in the specification. When the phrase was added, applicants failed to point out where the limitation can be found in the specification and the perusal of the specification did not find such a limitation. The only prior discussion of a conditioning solution in the specification is that no "potentially toxic conditioning solutions" are used [0027]. To now say that "no conditioning solutions are added to the soil during performed of the method" appears to constitute new matter. *Ex parte Grassilli* 231 USPQ 393, 395.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shapiro et al. (Shapiro), U.S. Patent 6,521,810 in view of Ho et al. (Ho), U.S. Patent 5,476,992.

Shapiro discloses an electro kinetic method for at least one of groundwater protection, soil remediation or soil engineering which comprises applying an electric field between iron-rich sacrificial electrodes, which are implanted in an area of water-bearing soil, sediment or slurry, wherein no conditioning solutions are added to the soil during performance of the method (see claims 1-19). The patent discloses the same arrangement of iron electrodes as the claimed application (see col. 4, lines 2-44). The patent further treats the same types of contaminants (see col. 3, lines 49-62).

The Shapiro patent fails to disclose that when an electric field is applied to iron electrodes, it generates an abrupt pH and Eh gradient from acid to alkaline conditions; and precipitating at least one of zero valent iron or an iron oxide to form a stable iron band occurring at the boundary between the acid and alkaline zones.

The patent does disclose that some of the iron ions are "absorbed" in the contaminated media, which appears to read on the above limitation (see col. 4, lines 62-65). The Ho patent is cited to show that the application of an electric field to electrodes within soil would inherently cause the "abrupt pH and Eh gradient" as claimed (see col. 3, lines 13-31, in particular lines 21-26). This change in pH inherently causes the precipitation of "heavy metals" which would cause the formation of the stable iron

Art Unit: 1795

containing band claimed (see col. 3, lines 21-26). The formation of the band of precipitated metals blocks the flow of water, which would read upon the trapping of contaminants in the soil as claimed (see col. 3, lines 24-26). The reference further teaches that the electrokinetics dewater soil (see col. 3, lines 29-31).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shapiro by the teachings of Ho.

One having ordinary skill in the art would have been motivated to do this modification, because Ho teaches that electrokinetics inherently produces the effects of dewatering, containment of contaminants, abrupt pH gradient and the precipitation of heavy metals into soil.

The Shapiro patent further fails to disclose the claimed range of voltage, however, the patent teaches the monitoring and adjustment of voltage based upon the desired result of contaminant treatment (see col. 5, line 40 to col. 6, line 6).

Consequently, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Shapiro patent, because the patent teaches that such modification to the control of the decontamination based upon the determined contaminant is within the purview of the disclosed invention.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that the Shapiro patent fails to teach the limitation, "wherein no conditioning solutions are added to the soil during performance of the method." As stated above, there is no basis in the specification for this language. The specification merely states that the present invent "does not involve the use of potentially toxic conditioning solutions."

The newly cited reference to Shapiro does not add any conditioning solutions. The electro kinetic treatment would inherently form the precipitated iron as claimed, because the Ho patent teaches that electro kinetic treatment of soils produces the same results.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

Art Unit: 1795

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/  
Primary Examiner, Art Unit 1795

asp